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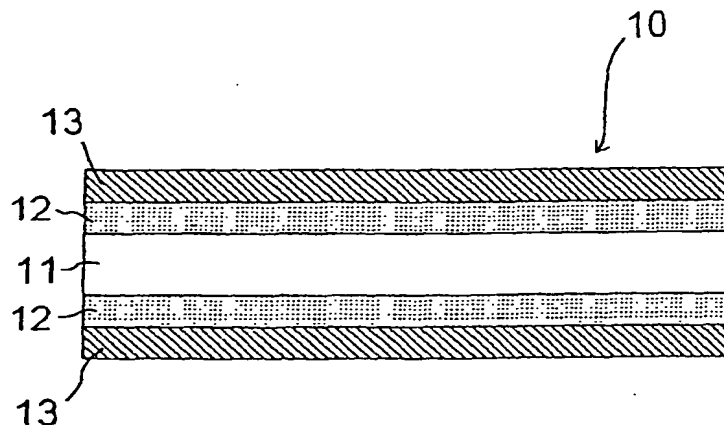
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— 国際調査報告書

2文字コード及び他の略語については、定期発行される各PCTガゼットの巻頭に掲載されている「コードと略語のガイダンスノート」を参照。

(54) Title: COMPOSITE CURRENT COLLECTOR

(54) 発明の名称: 複合集電体



(57) Abstract: A current collector effective for reductions in weight and thickness. The current collector produced by forming a conductive layer having a surface electric resistance not higher than  $1.3 \Omega/\text{cm}$  on the surface of a resin film and then forming an electrolytic plating layer having a thickness of at least  $0.3 \mu\text{m}$  per one side, characterized in that the surface electric resistance is not higher than  $40\text{m}\Omega/\text{cm}$  after electrolytic plating and following expression is satisfied;  $Y1+Y2+Y3 \leq 0.8 \times ((X1+X2+X3) \times Y3/X3)$  where, X1: thickness of resin film ( $\mu\text{m}$ ), X2: thickness of conductive layer ( $\mu\text{m}$ ), X3: thickness of plating layer ( $\mu\text{m}$ ), Y1: weight of resin film ( $\text{mg}/\text{cm}^2$ ), Y2: weight of conductive layer ( $\text{mg}/\text{cm}^2$ ), and Y3: weight of plating layer ( $\text{mg}/\text{cm}^2$ ).

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## INTERNATIONAL SEARCH REPORT

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International application No.

PCT/JP02/08715

## A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl<sup>7</sup> H01M4/66, H01M4/70

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl<sup>7</sup> H01M4/66, H01M4/70

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Jitsuyo Shinan Koho	1926-1996	Toroku Jitsuyo Shinan Koho	1994-2002
Kokai Jitsuyo Shinan Koho	1971-2002	Jitsuyo Shinan Toroku Koho	1996-2002

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
AA X Y A	JP 9-120818 A (Sony Corp.), 06 May, 1997 (06.05.97), Par. Nos. [0051], [0054] (Family: none)	1, 2, 4, 6, 7 8-13 3, 5
AC X Y A	JP 10-302753 A (Japan Storage Battery Co., Ltd.), 13 November, 1998 (13.11.98), Par. Nos. [0024], [0028] (Family: none)	1, 2, 4, 6, 7 8-13 3, 5
AD Y	JP 5-205746 A (Matsushita Electric Industrial Co., Ltd.), 13 August, 1993 (13.08.93), Claim 1; Fig. 1 (Family: none)	9-13

☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search  
11 December, 2002 (11.12.02)Date of mailing of the international search report  
24 December, 2002 (24.12.02)Name and mailing address of the ISA/  
Japanese Patent Office

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## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
AE Y	JP 2002-216775 A (Showa Seiko Kabushiki Kaisha), 02 August, 2002 (02.08.02), Claim 1 (Family: none)	9-13
AB Y	JP 10-116621 A (Sumitomo Electric Industries, Ltd.), 06 May, 1998 (06.05.98), Claim 1; Fig. 1 (Family: none)	8, 13